CASES

OF

EXCISION OF A PORTION OF THE LOWER JAW

FOR THE

CURE OF OSTEOSARCOMA

AFFECTING THAT BONE;

WITH SOME

OBSERVATIONS ON THE PATHOLOGY

OF

OSTEOSARCOMATOUS TUMOURS.

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The term OSTEOSARCOMA has been applied, even by the latest systematic writers, to two diseases of the bones, which although they resemble each other in several particulars, are nevertheless totally distinct in their nature and tendency. The one is a constitutional disease of a malignant nature, closely allied to, if it be not identical with *cancer* or with *Fungoid disease*; the other, al-

though in one sense a *constitutional* disease, as arising, (I believe) invariably in a scrophulous habit, is so far *local* that it has no power of contaminating the constitution, or of assimilating to its own nature the parts with which it is in contact. Hence when it proves fatal, it destroys, by the irritation which it excites in the constitution, or by the pressure which it exercises on some organ essential to life.* The particulars in which these diseases agree are, that in each a tumour is formed in the medullary canal, or in the cancellated structure of the bone. As the tumour enlarges the bone undergoes absorption from within, while new bony matter is laid on from without; in this way the bone becomes as it were expanded, ac-

* In the Dictionnaire des Sciences Medicales, Osteosarcoma, is thus defined: "*on doit selon nous reserver l'epithéte d'osteosarcome, a la maladie des os qui se rapproche le plus du cancer, des parties molles.*" And in the last edition of Sabatier's Medecine Operatoire (1824), M. Dupuytren speaks of "*cancerous affections either in front of or behind the lower jaw, penetrating into its substance,*" as among the causes requiring the excision of a portion of the bone. Professor Gräf of Berlin, gives an account of two cases of what he terms "Hydrostosis Carcinomatodes," in which he removed a portion of the lower jaw with success. In one of these cases "*the cancerous excrescences*" are described "*as nearly filling the mouth, descending into the neck, and involving the glands, muscles, and most important arteries and nerves.*" I need scarcely observe that when cancer, or any analogous disease of a malignant nature makes such ravages locally, the probability that the constitution itself is contaminated is so great, that even if the *whole* of the parts could be removed by an operation (which in Gräf's case was manifestly impossible), I much question if any surgeon in these countries would feel himself justified in advising one.

commodating its cavity to the size and shape of the tumour. Absorption, however, keeping pace with the growth of the swelling, proceeds more rapidly than deposition, in consequence of which the shell of bone which covered the tumour becomes thinner and thinner, until at length the greater part of it is removed; but the ossific process continuing, small spiculæ and nodules of bone are formed within the substance of the diseased growth. To this I may add that all forms of Osteosarcoma belong to the earlier rather than the later periods of life.*

Yet notwithstanding these circumstances, which are common to every form of Osteosarcomatous tumour, which arises from the cancellated structure of the bone and which in their earlier stages, render it difficult, if not impossible to distinguish between the *malignant* and the *benign* form of the disease, still as the tumour advances to the surface, the

* The distinction between these affections of the bone so similar in their *seat*, and in their *external characters*, but so different in their *nature*, did not escape the observation of Sir Astley Cooper. In his short but invaluable Essay on Exostosis, we find under the heads of *Fungous* and *Cartilaginous Exostosis of the medullary membrane*; the two forms of osteosarcomatous tumour, have been described with peculiar force and clearness. Sir A. Cooper's opinion seems to be, that "in the *Cartilaginous Exostoses* the disease *in its commencement* has nothing of a malignant tendency." My chief object is to prove that the *benign osteosarcoma* is a disease *sui generis*, which exhibits no character of malignancy from its commencement even to its fatal termination, a fact which, if it be fully established, must lead to the most important practical inferences.

distinctive character of each becomes clearly enough developed. The soft bleeding fungus, which makes its way through the integuments before the tumour has acquired any very considerable size—the profuse and *peculiarly* fœtid serous discharge, slightly tinged with the red particles of the blood,—the tubercles of a purple colour on the surrounding skin, which adheres firmly to the subjacent tumour—the pain—and above all the altered health, sufficiently point out the malignant character of the disease, and put the surgeon on his guard as to the prognostic he should make, or the operation he should advise.

So long then as the tumour lies deep among the muscles, and is covered by healthy integument, it is obvious that we have no means of acquiring any exact knowledge of its *structure*, and consequently can form but an imperfect idea of its *nature*; we are led however to infer the *benign character* of the disease, when its progress is slow and painless, when the skin is sound and unadherent to the tumour, and above all, when the constitution is unimpaired, and the countenance is healthy. But when the tumour is superficial, as when it springs from the jaw bone where it is covered only by the gum and by the lining membrane of the mouth, the character of the benign form of the disease is so clearly defined, that no surgeon who has once seen a tumour of this kind will be likely to mistake it for any other.

In this case, the first indication of this formidable disease is, the appearance of merely a small swelling or projection of the gum between two of the teeth. The teeth however, soon become loose and dislocated, being forced inwards upon the tongue, or outwards against the cheek ; as the tumour enlarges, it assumes a tuberculated appearance, the tubercles varying in colour from a light pink to a deep purple; they are firm in structure, perfectly indolent, and do not readily bleed even when roughly handled. As the morbid growth extends in all directions, the mouth is soon filled by the tumour, the lower jaw is forced downwards upon the forepart of the neck, the tongue is pushed backwards into the pharynx, the mouth is carried to the side of the face opposite to the tumour, and before the patient sinks under his sufferings, a tumour is sometimes formed which nearly equals the bulk of the head itself.* It is gratifying however, to be able to state, that even under such deplorable circumstances, life has been preserved, and the hideous deformity removed by an operation which must be considered as one of the boldest and most successful of which modern surgery has to boast.

But, it is from the *internal structure* of Osteo-sarcomatous tumours, as developed in the course of operations undertaken for their removal, or by dissection after death, that the true and distinctive

* See case of Mahony, related by Mr. Cusack in this Vol. of Reports.

characters of these affections are to be traced—in the BENIGN FORM OF OSTEOSARCOMA, the *local*, and I might almost say the *encysted* character of the disease, is evinced by the distinct line which separates the morbid growth from the soft parts with which it is in contact. It becomes apparent, that as the tumour has enlarged, it has pushed the soft parts before it, or insinuated itself into their interstices; and that so far from becoming incorporated with the surrounding structures, and assimilating them to its own nature (as invariably happens in the advanced stage of malignant tumours) it has formed attachments so slight, that when the portion of bone from whence the tumour springs is detached, the whole morbid growth may be (as it were) drawn out from the surrounding parts almost without the aid of the knife.

The interior of the tumour presents a great variety of structure, but I should say in general, that the *cartilaginous character* which the tumour exhibits in its origin, prevails to the last. In the early stages of the disease the tumour consists of a dense elastic substance, resembling fibro-cartilaginous structure, but the resemblance is more in colour than in consistency, for it is not nearly so hard, and is granular rather than fibrous, so that it "*breaks short.*"* On cutting into the tumour the edge of the knife grates against

* See plate, Eliza Howard's case.

spiculæ, or small grains of earthy matter with which its substance is beset. If the tumour acquires any considerable size, it is usually found to contain cavities filled with fluids differing in colour and consistency, but in general the fluid is thickish, inodorous, and of the colour of chocolate. Sometimes the growth of the tumour, or the secretion of the fluid within its substance, is so slow that the deposition of bony matter keeping pace with the absorption, the bone becomes expanded into a large and thick bony case, in which the tumour is completely inclosed. There is a beautiful preparation of this form of the disease, in the Museum of the Royal College of Surgeons ;* But in general the walls of the cavity consist of cartilaginous structure mixed with bone, the bone bearing but a small proportion to the cartilage.

The extent to which this description of tumour may encrease without materially affecting the general health, is one of the most extraordinary circumstances connected with its history.

CASE.

A gentleman about 38 years of age, who for 17 years laboured under an Osteosarcomatus tumour, which grew from the upper part of the Os femoris, continued until within the last three months of his life to delight the society in which he lived by the charms of his conversation, and

* Marked B. 30. See also plate.

by the exercise of his unequalled musical talents. Before his death the tumour acquired an almost incredible magnitude, it measured (including the thigh) six feet six inches in circumference. A few hours before his death he vomited several quarts of a brownish colour fluid, and died in the act of vomiting, in consequence of some of the fluid regurgitating into the trachæa, and causing suffocation.* The body was carefully examined on the following day by my friend Mr. M'Namara and myself; all the viscera were perfectly sound. The tumour formed a vast cavity, the walls of which varied in thickness from six to twelve inches; the cavity contained several quarts of a fluid which in colour, odour and consistence, exactly resembled that which had been vomited for some hours before death.† The walls of the tumour consisted of a firm cartilaginous structure, intermixed with bone, the bone being deposited in flat plates, on the outer surface and in

* In its earlier stages, this case was seen by Sir A. Cooper and Mr. Abernethy in London, and by the Baron Dupuytren in Paris. It was however during the last three years that the tumour acquired such an extraordinary developement when Sir A. Cooper and Mr. Abernethy saw it in the year 1817, (four years previous to the death of the patient), the tumour including the thigh measured about three feet six inches in circumference.

† I do not venture to offer an explanation of this extraordinary fact; it is plainly referable however to the obscure laws of Metastisis, which must be admitted to exist, although they do not (perhaps) in the present state of our knowledge admit of a satisfactory explanation.

small nodules (about the size of grains of shot) on the inner surface of the cavity. It appeared plainly that the tumour was enlarged by the constant deposition of a semitransparent gelatinous matter in large hemispherical granulations, each about half an inch in diameter; these gradually became consolidated into a substance resembling cartilage, and in the centre of each of these granulations was a small nodule of bone; a part of the tumour had passed over the brim of the pelvis, and pushed into its cavity, but the peritoneum was unbroken, and no connection could be traced between the cavity of the tumour and the intestines; in fact the cavity did not extend beyond the upper part of the thigh, and was completely enclosed by the thick cartilaginous and bony walls. Nothing remained of the os femoris except its head, and about four inches of its lower extremity; nevertheless so firm were the walls of the tumour, that, to the last, the patient was able to support his weight, and even to walk upon the diseased limb. The stomach, which appeared to be totally free from disease, contained about a pint of fluid perfectly similar, in all its apparent qualities, to that which was found in the cavity of the tumour. That there was nothing *malignant* in the character of this tumour may be inferred from the circumstance of its having subsisted for seventeen years without exerting any unfavourable influence on the general health, from its never having ulcerated, or thrown

out a fungus, and from the absence of all disease in the glandular system or in the viscera.

The following case exhibits an instance of this formidable disease in its earliest stage, and shows how much pain, deformity and danger, may be averted by a timely and decisive operation.

CASE.

Mrs. R. of Carlow, aged about 25 years, of a remarkably healthy and robust appearance, applied to me in January 1818, on account of a small tumour on the gum, which she said "had loosened one of the teeth." I found, on examination, a tumour about the size of a horse-bean, projecting from the alveolar process, between the two small molar teeth; it was firm in its texture, smooth on the surface, and of the colour of the gum from which it seemed to proceed; both molar teeth were loose, and the crown of one of them was pushed inwards upon the tongue. The dislocated tooth was extracted, the tumour was cut away by a strong and sharp pointed knife, and the actual cautery was then applied to the wound. Mrs. R. was apprized by Mr. Colles and myself, that the disease would be likely to recur, and she was advised to lose no time in returning to Dublin, in the event of our apprehensions being verified. Mrs. R. left town a few days afterwards, but returned in the month of June with a new tumour of the same kind, much larger than that which

had been before removed, but springing from the same spot. It was plain that nothing was to be expected from an operation, such as had been before performed, as the tumour obviously arose from the *cancellated structure* of the bone *below* the extreme points of the fangs of the teeth which it had displaced. A triangular portion of the jaw bone, including the sockets of the two small molar teeth was therefore removed by means of a fine watch-spring saw, and although the surface of the divided bone appeared sound, it was thought adviseable to apply the actual cautery. The wound healed kindly, and Mrs. R. left town in three or four weeks, apparently perfectly well. Previously to my writing this paper, being anxious to ascertain whether or not Mrs. R. had suffered from a return of the disease ; I wrote to Dr. Read, the respectable surgeon of the County of Carlow Infirmary, and requested of him to see Mrs. R. and acquaint me with any particulars which he might learn from her respecting the result of the operation. I had the satisfaction of receiving the following answer to my enquiries from Dr. Read on the 6th of December, 1826.

Carlow, December 5, 1826.

Dear Sir,

I had the honor of receiving your note of the second inst. on Sunday, which I would

have answered sooner, but that I waited to see Mrs. R. which I had not an opportunity of doing before this day. She says you performed the operation on her lower jaw seven years ago. She is at present in excellent health, and has had five children since that period. The tumour has not made its appearance since the last operation. I examined the jaw this day; it appears perfectly natural and healthy. She says she is very grateful to you for her life, and will call on you the first time she goes to Dublin.

I remain, dear Sir,

Your very obliged Servant,

ARTHUR READ.

In the following case the disease had proceeded much farther, and the operation was proportionally more severe, as in order to remove the whole of the disease it was necessary to cut out two-thirds of the lower jaw, through its whole depth.

CASE.

Elizabeth Howard, aged 18, of a delicate form and complexion, but enjoying excellent health, applied to me in the year 1818 on account of a swelling on the left side of the lower jaw bone, which extended from the first small molar tooth to the first incisor on the same side; the teeth were

all sound and firm in their sockets, the swelling gave her no pain, but caused some slight deformity, which as she was in other respects particularly good-looking, she was desirous of having removed. I explained to her the nature and tendency of the disease, and the severity of the operation which she would have to undergo for its removal; this I suppose alarmed her, for I saw no more of her until the month of May, 1824. During the intervening six years the disease had greatly extended, and her countenance had undergone a most striking change. In consequence of the projection of the lower jaw she looked, although but 24 years of age, like a woman of 70 or 80, but this was not all; upon the supposition that the tumour was merely attached to the jaw, an attempt had been made to remove it by an operation. The operation was succeeded by a smart hæmorrhage, which recurred from time to time, from an irregularly shaped fissure upon the internal surface of the tumour. On examining the swelling it appeared plainly to be formed by an expansion of a portion of the lower jaw, extending from the second small molar tooth on the left side to the second large molar on the right. The tumour was about three inches and a half in depth, and extended backwards as far as the base of the Os hyoides. The poor woman, who was exhausted by repeated losses of blood, and who was aware that the disease was rapidly progressive, was now willing to submit to any operation which might be judged

necessary for her relief. I therefore proposed the removal of the whole of the diseased portion of the jaw bone, and the operation was accordingly performed in the following manner, on the 18th of April, 1824, in the presence of Mr. Colles, Mr. Cusack, Mr. Stringer, Mr. M'Namara, Dr. M'Lean, and several other professional gentlemen of eminence.

A perpendicular incision was drawn downwards from the angle of the mouth on the left side until it passed the lower edge of the jaw by about one inch; from the extremity of this incision another was drawn directly across the triangular space included between the branches of the lower jaw, and terminated at the insertion of the masseter muscle on the right side. The flap thus formed was dissected off the tumour, and turned over upon the right side of the neck. The whole extent of the tumour was thus laid bare. A strong, slightly curved packing needle, blunted at the point, and threaded with Dr. Jaffray's chain saw, was passed from below upwards through the mouth about $\frac{1}{4}$th of an inch beyond the expanded portion of the bone on the left side; the handles being applied, the jaw was cut through, by a very few strokes of the saw; the same proceeding was employed on the right side, and thus, the whole of the diseased portion of bone was completely insulated. The rest of the operation was performed in a few seconds; for on dividing the muscles which were inserted into the detached

portion of the jaw, close to the bone, from below, and the membrane of the mouth from within, the whole of the tumour was, with great ease, *drawn out* from the parts by which it was surrounded, but to which it had but very slight cellular attachments. No vessel of such a size as to require to be secured by ligature was wounded in the operation, for the trunk of the labial artery, which was exposed on the right side, was drawn aside by an assistant. The flap of skin was replaced and secured by two points of suture, supported by adhesive plaster, and a suitable bandage. The operation was succeeded by so little constitutional disturbance that the patient remained but one day in bed. The whole of the external wound united by the first intention, and in a few weeks the woman returned to the north of Ireland in perfect health. It is worthy of remark that the portions of the lower-jaw, which remained on either side, became united by a ligamentous structure of such firmness, that in the act of "opening the mouth" the lower jaw descended as firmly, and with as uniform a motion, as if its continuity had never been broken.*

* It can in no degree detract from the credit of Mr. Dupuytren (to whom unquestionably is due the merit of having been the first to perform the excision of a portion of the lower jaw,) to state, that I had seen no account of his operations, nor of those subsequently performed in 1821 by Mr. Mott in America, and by Mr. Gräf in Berlin, at the time the operations which I have just described were performed. The first account which I

The following Case illustrates the external character of the *Malignant* as opposed to the *Benign Osteosarcoma* of the lower jaw:

In the month of September, 1825, Mr. Cusack directed my attention to the case of a man of about fifty years of age, in the Long-ward of Steevens's Hospital, who had a large osteo-sarcomatous tumour, proceeding from the angle of the lower-jaw. Internally the tumour was formed by a large, soft, and bleeding fungus not unlike a soft wart, in which the molar-teeth were imbedded, and which poured out a sanies having an insufferably fetid smell. Externally, the skin was hard, slightly tuberculated, adherent to the tumour, and in parts of a dull purplish colour. The submaxillary gland, which was of a stony hardness, was enlarged, and apparently consolidated with the jaw bone. I at once gave it as my opinion, that this was no case for operation, an opinion in which Mr. Cusack and the

can find of Mr. Dupuytren's operations is contained in the 22d vol. of the Dict. des Sciences Med. and in his Edition of Sabatier's "*Medicine Operatoire*," published in 1824." The account of Gräf's operations was first published in these countries about a year ago (as I think) in the Lancet, and the first accounts of the American operations is contained in Professor Patison's edition of Burn's Anatomy of the Head and Neck, 1824. That the operation was not known in Great Britain until a very late period may, I think, be inferred from the fact that no allusion is made to it in Mr. Cooper's excellent Surgical Dictionary, published 1823, nor in any British periodical journal of an earlier date than 1824.

other surgeons of the Hospital entirely concurred. In a few weeks the skin ulcerated, and the side of the face and neck was occupied by a frightful cancerous ulceration, which laid bare the muscles of the neck down to the trachæa and œsophagus.

The *internal structure* of osteosarcomatous tumours of a malignant nature has been so often and so well described by British pathologists, that I should not have thought it necessary to enter more at large upon the subject, were it not that the different views which are entertained in Great Britain and in France with respect to the *nature* of these affections, makes it necessary to refer in a particular manner to their structure, in order to ascertain how far those opinions are founded on exact observations or on just analogies.

In France and I believe, in Germany all osteosarcomatous tumours are considered to be of a malignant nature, and in fact to be identical with cancer, modified however by the peculiar structure of the part which they affect. The fungus hæmatodes of Mr. Hey, and the medullary sarcoma of Mr. Abernethy are included under the same comprehensive term; and we accordingly find cases of (what in Great Britain would be considered as) Fungus Hæmatodes *commencing in* the soft parts, and *extending* to the bone, described as osteosarcoma, or cancer of the bone itself. In these countries, on the contrary, the

fungus hæmatodes or medullary sarcoma is considered as a disease, *sui generis*, totally distinct from cancer, resembling it only in its intimate connection with the constitution, its tendency to throw out fungus, and its being incurable under any known medical treatment. British pathologists are also of opinion that Fungus Hæmatodes may arise in any of the various structures of the body, and that wherever it appears it exhibits a peculiar character which sufficiently distinguishes it from cancer.*

In the following Case it would, I think, appear that the medullary sarcoma originated in the *cellular parenchyma* of the bone, and from thence extended to the surrounding soft parts.

CASE.

In the summer of 1825 I was consulted by a lady of about 55 years of age, on account of (what she considered) a dimness of sight affecting the right eye; the eye felt exceedingly hard to the touch, was affected by strabismus, and projected in some degree from the orbit; the pupil was immoveable, but vision was not altogether destroyed. She complained of severe shooting pains in the head and in the right arm; her general health

* I am aware that fungus hæmatodes and medullary sarcoma are by some Pathologists considered as distinct diseases, I believe however that the general opinion is that they are but varieties of the same morbid state.

was much impaired, and her aspect was almost cadaverous; her memory seemed much impaired, and there was a general insensibility to external impressions; she was depressed in her spirits, yet she made but little complaint. On an attentive examination it was plain that there was some fullness in the situation of the temporal fossa, but the tumour was perfectly indolent and incompressible. I did not see the lady again for four or five weeks, when I found her nearly comatose; the swelling on the temple had encreased to a considerable degree, and the eye was still further protruded from the orbit. She expired in a few days, and on the day following her death, the head was carefully examined by Mr. Macnamara and myself. On raising the aponeurosis of the temporal muscle, the temporal fossa was found to be occupied by a greyish coloured substance of the consistence of brain; the muscle itself had completely disappeared; numerous spiculæ of bone, proceeding from the frontal and temporal bone, passed into the tumour, of which they constituted a considerable part. On opening the head a tumour of precisely the same description, beset in the same manner by bony spiculæ, was found lodged between the dura mater and the internal orbital process of the frontal bone. On macerating the bone it exhibited the most perfect specimen I have seen of the "*fibrous exostosis*," the spiculæ proceeding both from the outer and the inner table of the cranium were each about as thick as a hog's bristle, and about $\frac{3}{4}$th of

an inch in length; they were set as closely together as the hairs of a brush, and extended in an undulating line over a space of about two square inches in extent.* The tables of the skull were slightly separated from each other in the part corresponding to the exostosis, and the diploe seemed to contain some of the same brain-like matter which formed the bulk of the tumour. It is of course impossible to decide whether in this case the disease *commenced* in the soft parts, or in the bone; but it seems probable that it commenced in the bone, because the spiculæ were furnished by the bone itself, and not by the periosteum or dura mater, which were separated by the tumour to the distance of nearly an inch from the outer and inner tables of the skull respectively. In *malignant osteosarcoma*, however, it is more usual to find a deficiency than an excess of bony matter, for although spiculæ of bone are interspersed through the brain-like matter which forms the bulk of the tumour, the bone itself is usually divested of its earthy basis, and is converted into a steatomatous or cartilaginous substance. Sometimes, however, the tendency to secrete phosphat of lime is surprizingly encreased, and then large and singularly shaped masses of bony matter are thrown out from the surface of the diseased bone.†

* See Preparation, B. 26, Museum of the College of Surgeons, and Plate.

† See Preparation No. 9 and 10 in the Museum of the Royal College of Surgeons, in which the earthy deposition from the head of the tibia weighed several pounds.

The existence of these varieties in the *structure* and in the *nature* of tumours proceeding from the bones may perhaps admit of the following explanation :

The *cellular parenchyma*, or organised matrix of bone, like every other organized structure of the animal system, is liable to inflammation ; but the *character* of that inflammation, whether *acute* or *chronic*, *simple* or *specific*, will be determined by the character of the constitution in which it is excited.

Thus in a cachectic habit, when there is a predisposition to morbid actions, on the application of any disturbing influence, the inflammation will be likely to excite, or to terminate in, diseased actions, the product of which may be cancer, medullary sarcoma, or some analogous disease of a malignant nature. If the inflammation on the contrary be excited in a scrophulous habit, the morbid structure to which it gives rise will preserve the scrophulous character, and the result will be a diseased growth, sufficiently intractable under any treatment, but still possessing no character of malignancy.

In a healthy constitution the inflammation will probably subside without causing any permanent alteration in the structure of the bone, or it may terminate in simple abscess or necrosis.

The presence or the absence of bony matter in an osteosarcomatous tumour will probably depend upon the relative activity of the secerning and absorbent systems in the diseased bone; if the vessels which secrete phosphat of lime be in a state of inordinate excitement the whole bone will become enlarged, and a great quantity of earthy matter will be thrown out in irregular masses from its surface;* if, on the contrary, the activity of the secerning system be diminished while the activity of the absorbent system is increased, the phosphat of lime will disappear, and the bone will be converted into a substance resembling cartilage.

If this view of the subject be correct, much of the confusion in which the subject of "*osseous diseases*" is involved, will be removed, and we shall be able to understand how it happens that the same disease is to be found in different nosological arrangements in the apparently opposite classes of *exostosis and osteosarcoma.*

But whatever may be thought of the *explanation*, to which indeed I am not disposed to attach any great importance, the *fact* may, I believe, be considered as well established, that of the tumours which proceed from the *cancellated structure* of the bones, some are of a *malignant nature*, closely

* See the preparations marked M. O. 9, 10, in the Museum of the College of Surgeons.

allied to cancer, or to fungoid disease, and like those diseases so prone to contaminate the constitution, as well as the parts with which they are in contact, that the removal of the diseased part rarely serves as a protection to the system, from a return of the disease; that others, on the contrary, are without any character of malignancy, and so purely local in their nature that where the removal of the *whole of the disease*, however extensive, can be effected, the operation may be undertaken with the best prospect of affording permanent relief.

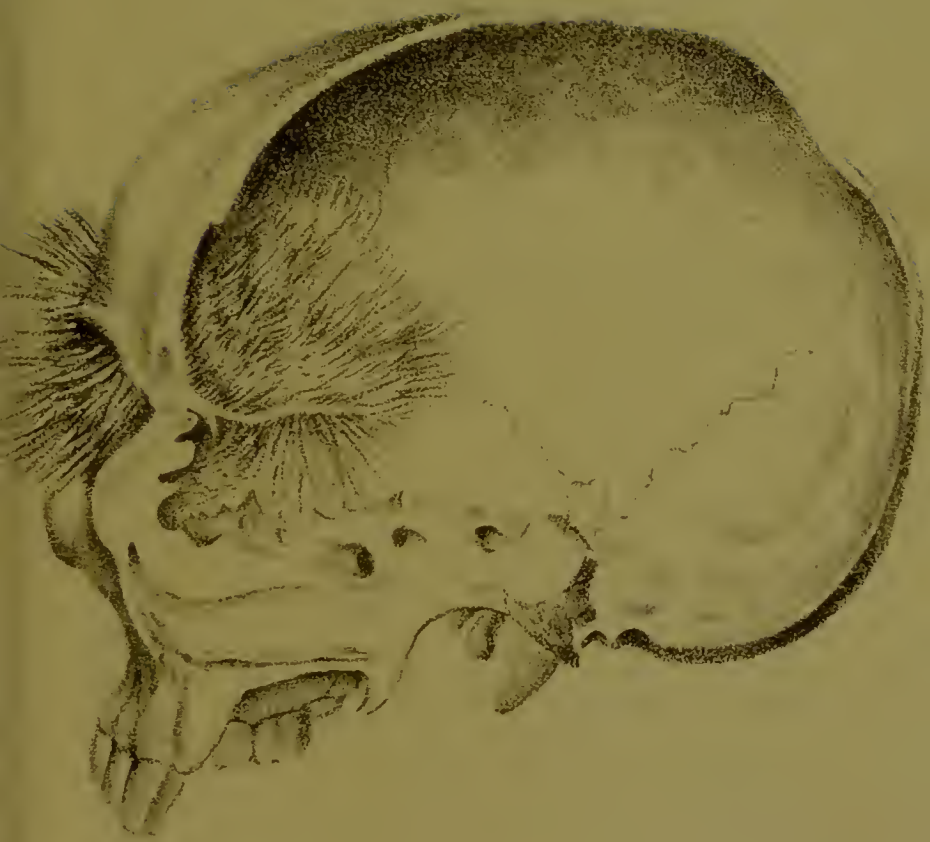
P. S. Since this paper was sent to the press I have been so fortunate as to see a copy of M. Richerand's late work entitled *Histoire des progrès récens de la Chirurgie*, written, as he informs his readers, upon the plan of Mr. Sharpe's "Critical Inquiry." The reputation of M. Richerand as an author, and his connection with one of the principal hospitals in Paris, entitle his work to be considered as fairly representing the state of surgical opinion and practice in the metropolis of France. It appears then, that the opinion respecting the *cancerous nature* of Osteosarcomatous tumours is still universally maintained; their removal by operation is advised, not from any expectation that it will prove successful in curing the disease, but merely "*to sustain the hopes of the patient.*"* M.

* C'est surtout pour, les derober à cette terrible extrémité (desespoir) que nous croyons le chirurgien autorisé à opérer, p. 211. It is due to M. Delpech to state that he dissents from this opinion of M. Richerand's, while he maintains the incurable nature of osteosarcoma.

Richerand's statement of the result of the operations which have been performed for the removal of "*cancerous tumours*" affecting the bones of the face, is so startling, that I have thought it right to give the passage in the words of the author :—

"Plus de trente malades, admis a l'hotel Dieu, depuis une vingtaine d'annes, ont été traités de cette maniere, *tous sans exception sont morts des suites de l'operation, aucun n'a echappé.*—La resection non de la face mais seulement de la machoire inferieure dans de cas de cancer adherent a cet os, a ete tentée deuxfois a l'hopital Saint Louis, *les malades ont succombé au bout de deux mois.* Le Prof. Dupuytren a le merite d'avoir le premier assujette a des regles, et pratiqué avec succés ; il y a douze annes, l'operation, dont il s'agit *répétée depuis elle n'a point obtenu la même reussite.*"

No person who has had the advantage of witnessing the admirable dexterity and skill of the Parisian Hospital Surgeons, can for one moment suppose that this lamentable want of success can be attributed to any defect in their manner of operating, but if it be considered that, in Paris, the operation of excision seems to be extended without discrimination to all cases of cancer of the face and jaw, extending to the bone, the almost *uniformly fatal* result of the operations, can no longer be a source of surprize.



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